

11. The method of claim 10, further comprising the step of:

calculating the pressure applied at each point being touched.

12. The method of claim 10, wherein the:

pressure sensing device is selected from the group consisting of force sensing resistors, piezoelectric sensors and capacitive touch sensors.

13. The method of claim 10, wherein the:

pressure sensing devices comprise strain gauges.

14. The method of claim 10, wherein the:

processor is a digital signal processor (DSP).

15. The method of claim 10, wherein the:

pressure sensors are arranged in a matrix configuration.

16. A method of claim 13, wherein the:

sensors are arranged in a matrix.

17. The method of claim 10 wherein the:

processor performs an algorithm comprising the steps of:

- a. sampling the signals from the plurality of strain gauges;
- b. calculating locations of single or multiple touches on the touch pad;
- c. calculating the amount of pressure exerted on each touch on the touch pad;
- d. outputting calculation data from the algorithm to control the application.

18. The method of claim 10 further comprising the step of:

identifying the strain gauge positions with the formula: (a_i, b_i) , $i=1, 2, \dots, N$, where N is the number of strain gauges, and the measured pressures of strain gauges are p_i , $i=1, 2, \dots, N$;

programming the positions of the touch points on multi-point touch pad as (x_j, y_j) , $j=1, 2, \dots, M$, where M is a known number of the touch points (less than N), but x_j and y_j are unknown and will be determined by the calculations of the algorithm;

quantifying the pressures of the touch points with the formula z_j , $j=1, 2, \dots, M$, using the algorithm;

transfer sampling data from a sampling module to a calculation module;

calculate the position and pressure of the touch points using the following mathematical formula: $p_i = w(|(x_1, y_1) - (a_i, b_i)|)z_1 + w(|(x_2, y_2) - (a_i, b_i)|)z_2 + \dots + w(|(x_M, y_M) - (a_i, b_i)|)z_M$, $i=1, \dots, N$; where $w(|(x_j, y_j) - (a_i, b_i)|)$ is a weighting factor that reflects the effect of pressure z_j on p_j using the algorithm;

calculate that: $w(|(x_j, y_j) - (a_i, b_i)|)$ is a function of the distance between the touch point (x_j, y_j) and the sensor location (a_i, b_i) using the algorithm;

calculates that $|(x_j, y_j) - (a_i, b_i)| = \sqrt{(x_j - a_i)^2 + (y_j - b_i)^2}$ as being the distance between the touch point of j and the sensor i using the notation "sqrt" as representing square root using the algorithm.

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